REMARKS/ARGUMENTS

Petition is hereby made under the provisions of 37 CFR 1.136(a) for an extension of three months of the period for response to the Office Action. Authorization to charge the fee to our deposit account is enclosed.

The Examiner will note that the claims have been amended to limit the T-helper molecule to the specific molecule CLP-243 (claim 4) and the T-cell inducing HIV-derived molecule to the specific molecules CLP-175 and CLP-176 (claim 10). Claims 2 to 4 and 6 to 10 have been deleted consequentially.

The Examiner objected to the Abstract under 37 CFR 1.72. Submitted herewith is a substitute Abstract which contains the text of the Abstract from PCT/CA99/00287 but without the additional information to which the Examiner refers. It is submitted that the disclosure now complies with 37 CFR 1.72.

The Examiner objected that the listing of the references in the specification is not a proper information disclosure statement. That listing of references was not intended to be an IDS, and, indeed, applicants have submitted listings of references pursuant to 37 CFR 1.98 that the Examiner has indicated have been reviewed. Accordingly, it is submitted that the provisions of 37 CFR 1.98 have been complied with.

The Examiner rejected claims 1 to 11 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention. The Examiner referred specifically to the terms "T-helper molecule" and "T-cell inducing HIV-derived molecule".

As noted above, the claims have been amended to limit claim 1 to specific form of the "T-helper molecule" and T-cell inducing HIV-derived molecule". Accordingly, it is submitted that the limitation of these terms to specific defined molecules clearly removes any perceived indefiniteness in the use of term.

Accordingly, it is submitted that claims 1 to 11, insofar as they remain in the application and in their amended form, can no longer be considered to be indefinite, and hence rejection thereof under 35 USC 112, second paragraph, should be withdrawn.

The Examiner rejected claims 1 to 11 under 35 USC 112, first paragraph, as failing to satisfy the written description requirement of that section with respect to the terms "T-helper molecule" and "T-cell inducing HIV-derived molecule".

By limiting the claims to specific T-helper molecule and specific T-cell inducing HIV-derived molecules, it is submitted that the written description requirement has been met and the rejection of claims 1 to 11, insofar as they remain in the application in their amended form, under 35 USC 112, first paragraph, should be withdrawn.

The Examiner rejected claims 1 to 5, 7 and 11 under 35 USC 103(a) as being unpatentable over van Baalen in view of Thornton et al.

This application is directed to a method of generating an HIV-specific cytotoxic T-cell response in a host by a protocol which involves:

first administering a T-helper molecule to prime T-helper cells of the immune system of the host, and then

subsequently administering to the host a mixture of the T-helper molecule and a T-cell inducing HIV-derived molecule to generate an HIV-specific T-cell response in the host.

As noted above, claim 1 has been limited to the T-helper molecule being that identified in the specification as CLP-243 (SEQ ID NO:10), as previously recited in claim 4. As set forth in the disclosure, CLP-243 in an I-A^b-restricted peptide encompassing amino acid residues 128 to 140 of the hepatitis B virus nucleocapsid antigen (page 8, liens 13 to 16).

In addition, claim 1 has been further amended to recite that the T-cell inducing HIV-derived molecule is a lipopeptide which is CLP-175 or CLP-176, as previously recited in claim 10. As set forth in the disclosure, CLP-175 and 176 are palmitoyl or cholesterol respectively modified forms of SEQ ID NO: 9, a 52 to 116 amino acid sequence of HIV-1 (LAI) Rev protein (see Table 2).

The Examiner did not include claim 10 in the rejection which thereby is moot. However, the Examiner did reject claims 8 to 10 under 35 USC 103(a) as being unpatentable over van Baalen et al, in view of Thornton et al and further in view of Chisari.

It is submitted that the pending claims are not obvious over this combination of prior art. In particular, it is submitted that the combination of references does not disclose or suggest the prime-boost regimen recited in claim 1.

It is true, as the Examiner states, that van Baalen et al disclose immunogenic compositions comprising HIV-1 Rev CTL epitopes, immunizing formulations and adjuvants. The Examiner also is correct that the van Baalen reference does not disclose administration of another polypeptide comprising a T-helper epitope along with the CTL epitopes described in van Baalen.

Significantly, van Baalen also does not disclose or suggest a procedure of administration in which there is an initial administration of a polypeptide comprising a T-helper cell epitope to the host prior to administration of the mixture to which the Examiner refers.

The Thornton et al reference, as the Examiner states, discloses polypeptides corresponding in amino acid residue sequence to T-cell stimulating regions of HBV nucleocapsid protein and the specific polypeptide CLP-243 employed in the present invention.

It should be noted, however, the HBV and HIV are quite different viruses, with HBV being a DNA, partially double-stranded viruses, while HIV is a

single-stranded RNA virus. It is not obvious an HBV-derived peptide would be functional along with an HIV-derived polypeptide to stimulate an HIV-specific CTL-response in a host.

In addition, while, as the Examiner indicates, Thornton et al in col. 17, states:

> "The HBcAg T cell epitope containing polypeptides can be used to enhance the immunogenicity of a polypeptide immunogen, preferably a pathogen related immunogen."

this passage is immediately followed by disclosure of how this result is achieved:

> "Broadly, a method for accomplishing this purpose comprises operatively linking a HBcAg T cell epitope containing polypeptide to the immunogen." (col. 17, lines 42 to 44)

The applicants claims do not involve fusion proteins. As discussed above, the applicants claims involve an initial administration of the HBV peptide CLP-243 followed by a subsequent administration of a mixture of the HBV peptide CLP-243 with the HIV-derived lipitated peptide CLP-175 or 176. There is no suggestion in the combination of van Baalen and Thornton et al that this procedure would be successful in generating and HIV-specific CTL response in the host.

The Chisari et al reference is again concerned with HBV antigen and is not, in any way, related to HIV. The reference is in no way indicative that lipitated HIV-derived peptides, specifically the lipitated Rev-based CLP-175 and CLP-176, would be useful in generating HIV-specific CTLs in a host.

Accordingly, it is submitted that claims 1 to 11, insofar as they remain in the application and in their amended form, are patentable over the applied art and hence the rejection thereof under 35 USC 103(a) as being unpatentable over van Baalen et al in view of Thornton et al and, optionally further in view of Chisari et al, should be withdrawn.

It is believed that this application is now in condition for allowance and early and favourable consideration and allowance are respectfully solicited.

Respectfully submitted,

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